

California-Nevada Climate and Drought Update

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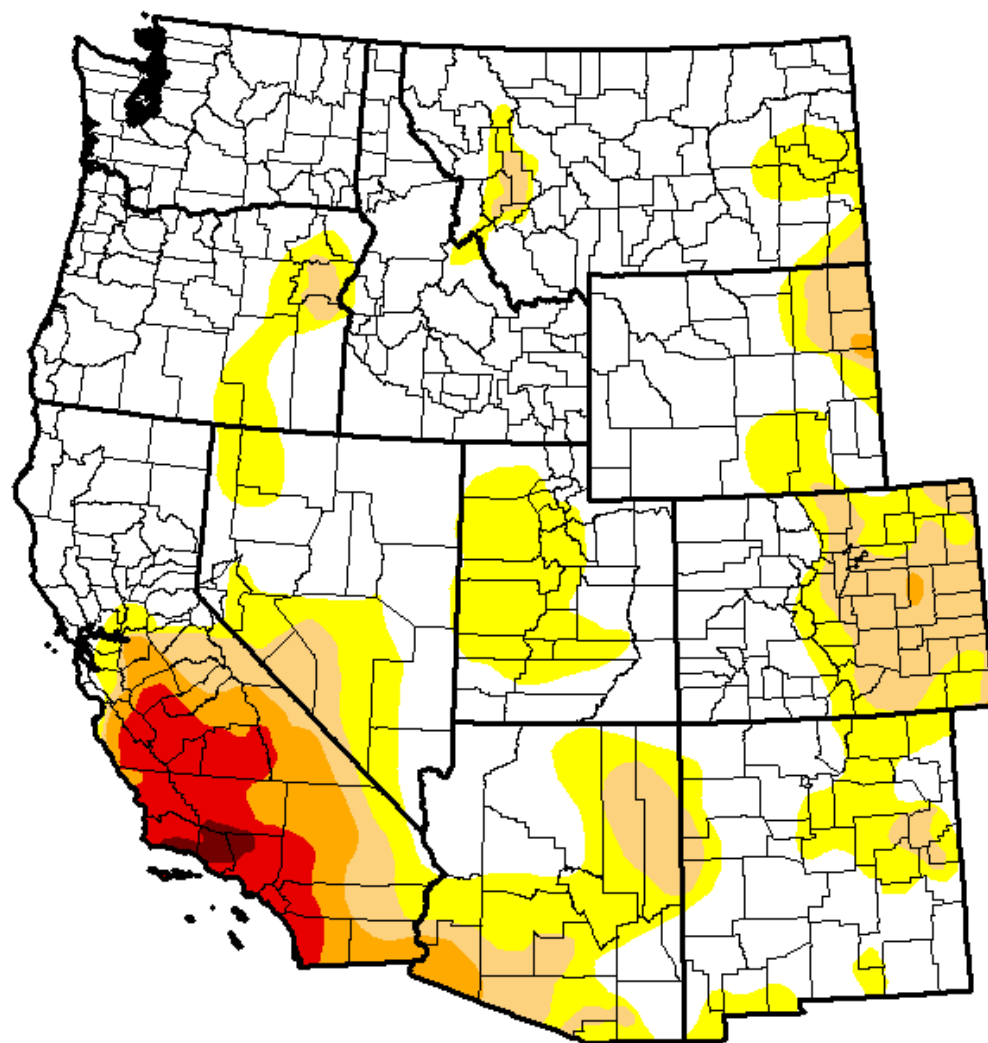
Granite Chief ski lift, Squaw Valley, January 12, 2017

Photo: @squawalpine Twitter

CNAP-NIDIS Drought and Climate Update Webinar
January 23, 2017

U.S. Drought Monitor West

January 17, 2017
(Released Thursday, Jan. 19, 2017)
Valid 7 a.m. EST



Drought Conditions (Percent Area)

	None	D0	D1	D2	D3	D4
Current	65.21	19.08	9.31	3.15	2.96	0.28
Last Week <i>1/10/2017</i>	64.95	18.94	8.92	3.48	3.42	0.28
3 Months Ago <i>10/18/2016</i>	47.36	27.88	13.53	5.51	2.93	2.81
Start of Calendar Year <i>1/3/2017</i>	54.19	24.30	12.98	3.42	2.67	2.44
Start of Water Year <i>9/27/2016</i>	27.78	41.27	17.50	7.68	2.97	2.81
One Year Ago <i>1/19/2016</i>	37.36	22.46	18.60	9.32	6.13	6.14

Intensity:

D0 Abnormally Dry	D3 Extreme Drought
D1 Moderate Drought	D4 Exceptional Drought
D2 Severe Drought	

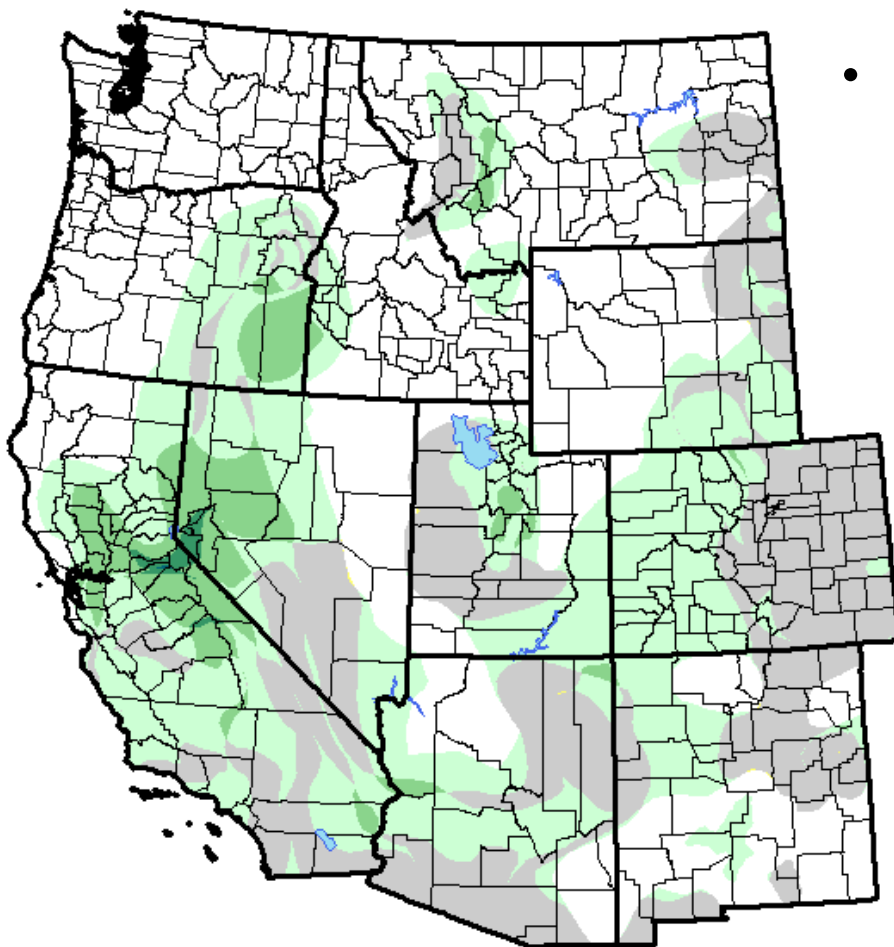
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author:
Richard Tinker
CPC/NOAA/NWS/NCEP

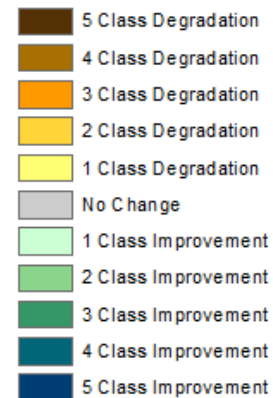


U.S. Drought Monitor Class Change - West 1 Month

- Widespread 1-3 class improvements in the past 4 WEEKS!



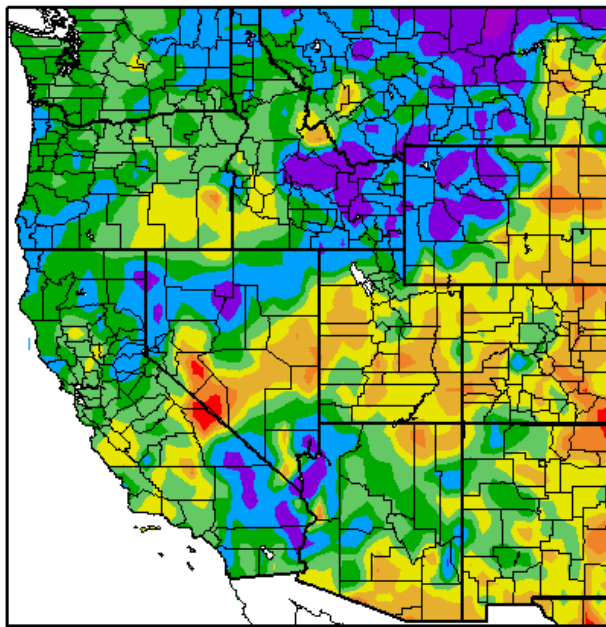
January 17, 2017
compared to
December 20, 2016



Precipitation

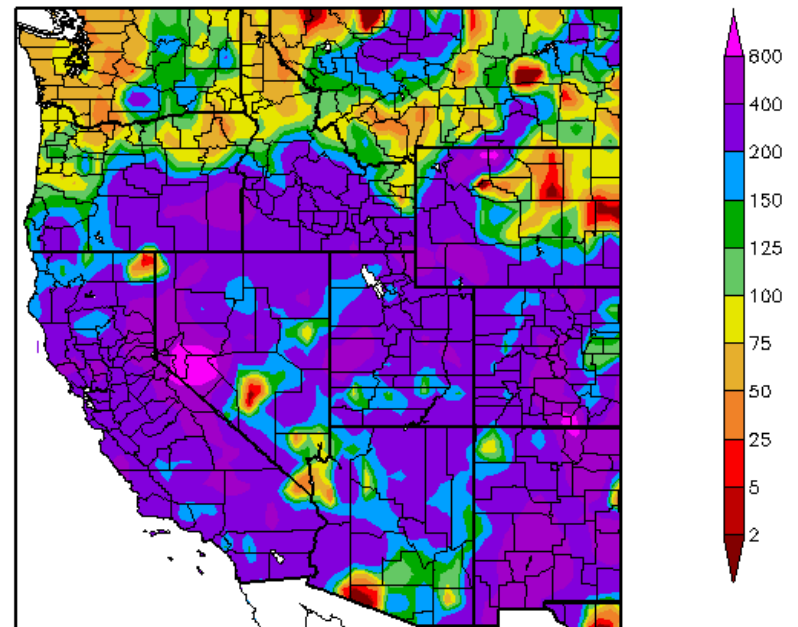
OND 2016

Percent of Normal Precipitation (%)
10/1/2016 – 12/31/2016



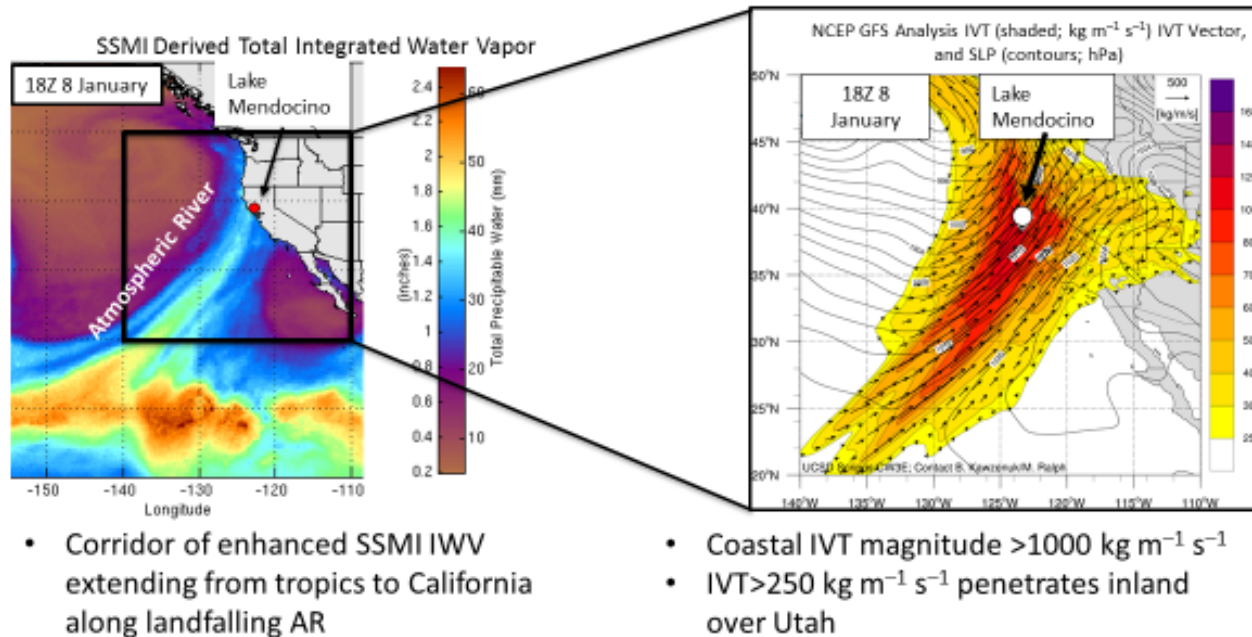
January 1 – January 22, 2017

Percent of Normal Precipitation (%)
1/1/2017 – 1/22/2017



Abundant Atmospheric Rivers

Peak AR Conditions on 8 Jan 2017



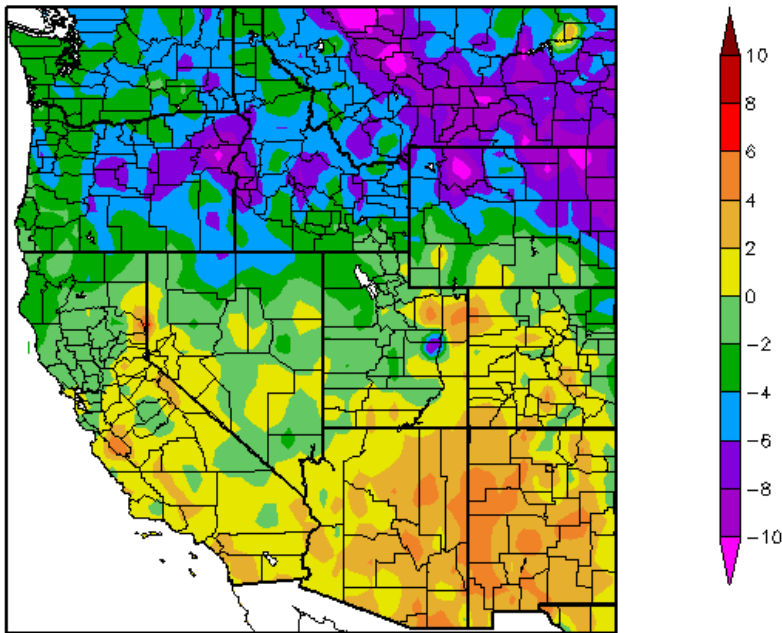
Notable December and January AR events:

December 9-10, December 14-16, January 7-10

Temperature

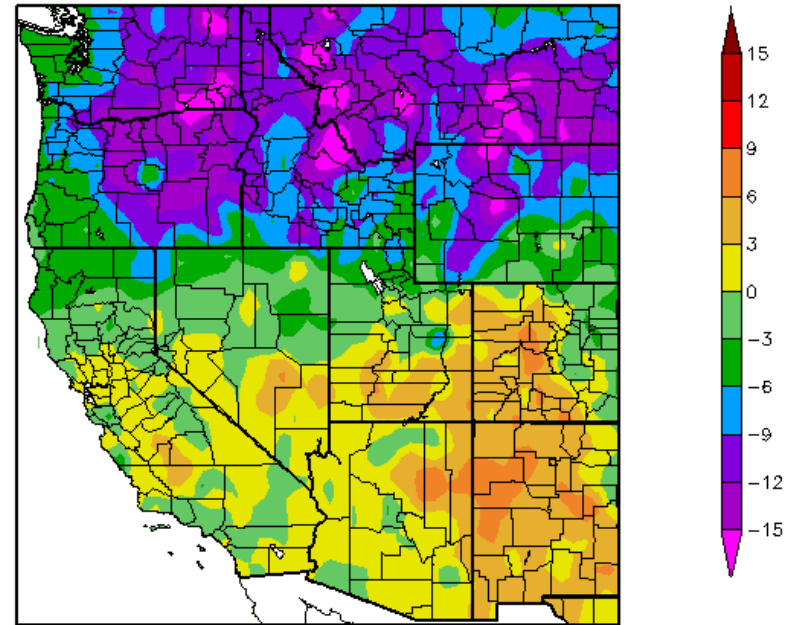
December 2016

Departure from Normal Temperature (F)
12/1/2016 – 12/31/2016



January 1 – January 22, 2017

Departure from Normal Temperature (F)
1/1/2017 – 1/22/2017



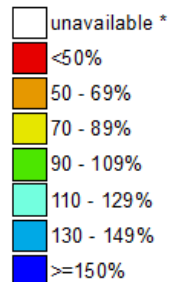
- Above average temperatures occurred during several major atmospheric river events in both December and January
- How did this effect snowpack???

Snowpack

Nevada/California SNOTEL Current Snow Water Equivalent (SWE) % of Normal

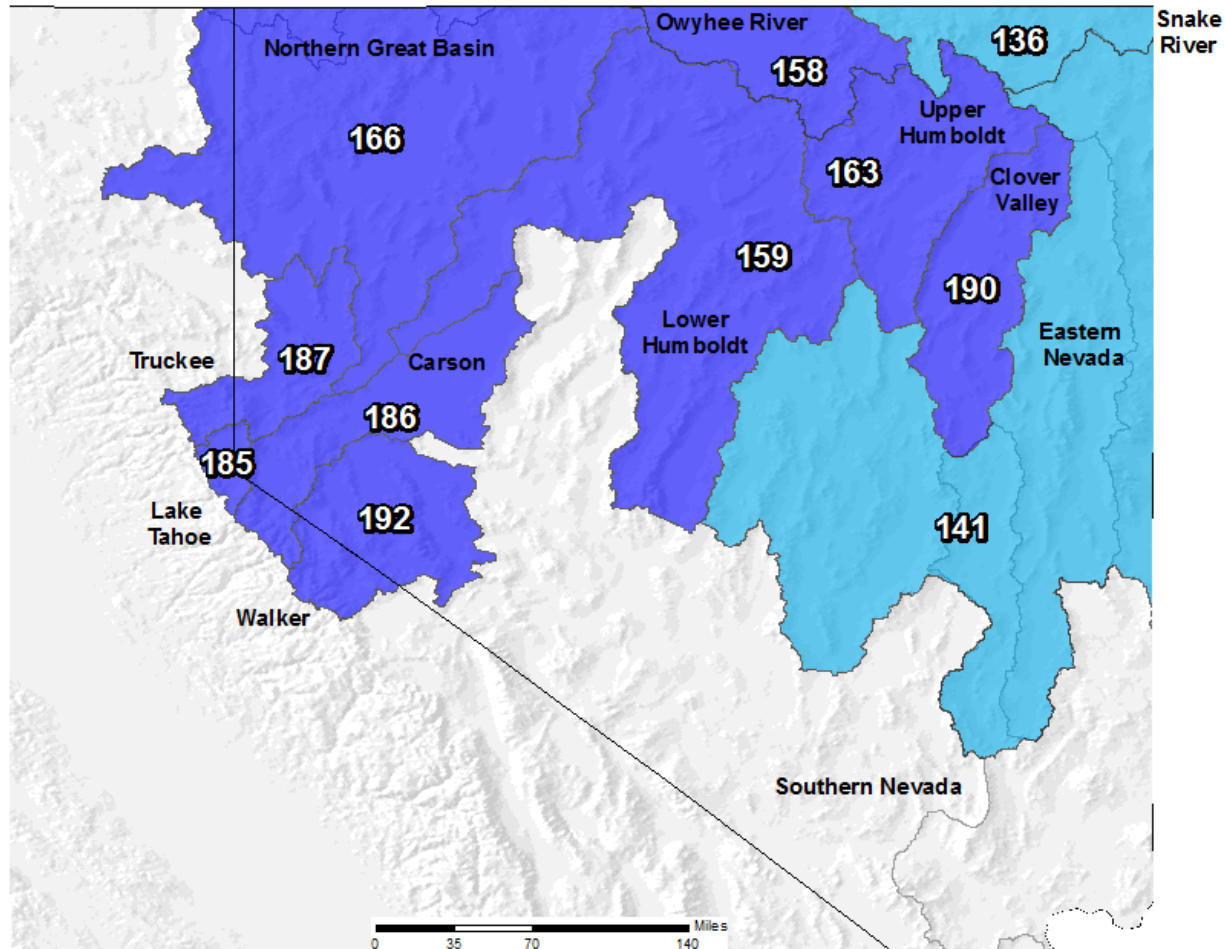
Jan 19, 2017

Current Snow
Water Equivalent
Basin-wide Percent
of 1981-2010 Median



* Data unavailable
at time of posting
or measurement
is not representative
at this time of year

*Provisional data
subject to revision*



The current snow water equivalent percent of normal represents the snow water equivalent found at selected SNOTEL sites in or near the basin compared to the average value for those sites on this day. Data based on the first reading of the day (typically 00:00).

Prepared by:
USDA/NRCS National Water and Climate Center
Portland, Oregon
<http://www.wcc.nrcs.usda.gov>

Snowpack

Current Regional Snowpack from Automated Snow Sensors

% of April 1 Average / % of Normal for This Date



NORTH	
Data as of January 20, 2017	
Number of Stations Reporting	30
Average snow water equivalent (Inches)	21.0
Percent of April 1 Average (%)	76
Percent of normal for this date (%)	143

CENTRAL	
Data as of January 20, 2017	
Number of Stations Reporting	43
Average snow water equivalent (Inches)	25.7
Percent of April 1 Average (%)	88
Percent of normal for this date (%)	168

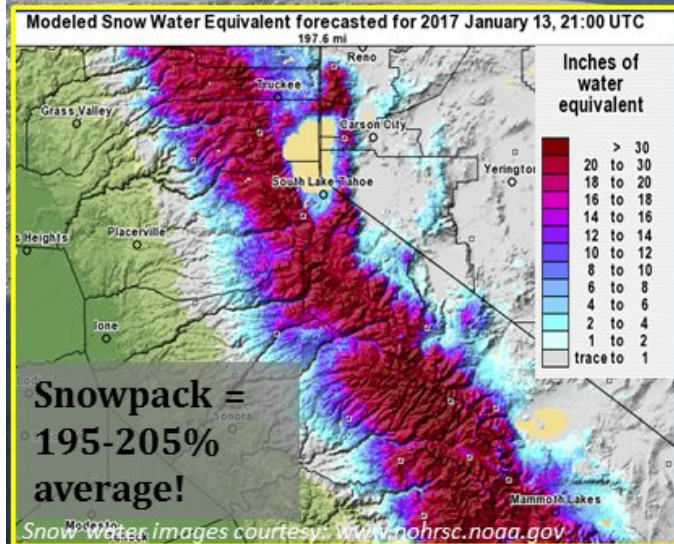
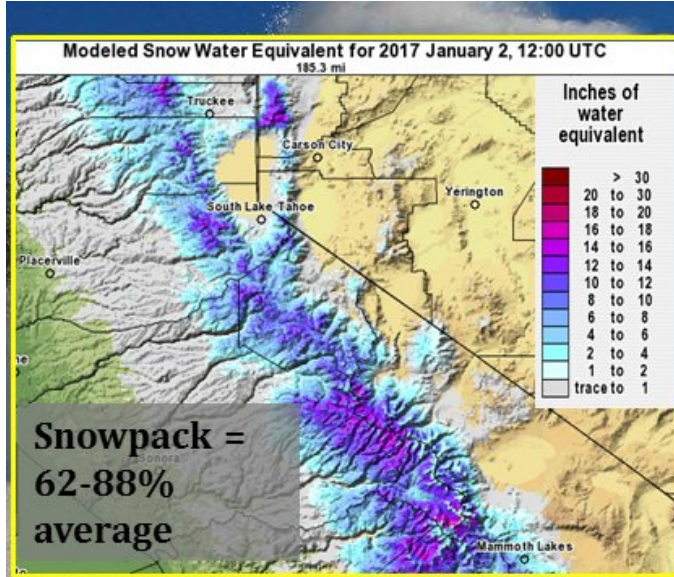
SOUTH	
Data as of January 20, 2017	
Number of Stations Reporting	30
Average snow water equivalent (Inches)	24.8
Percent of April 1 Average (%)	95
Percent of normal for this date (%)	197

STATE	
Data as of January 20, 2017	
Number of Stations Reporting	103
Average snow water equivalent (Inches)	24.1
Percent of April 1 Average (%)	86
Percent of normal for this date (%)	168

Currently at 86% of
April 1 Average
statewide!

Statewide Average: 86% / 168%

Snowpack



Snowfall Ranges – Jan 2-13

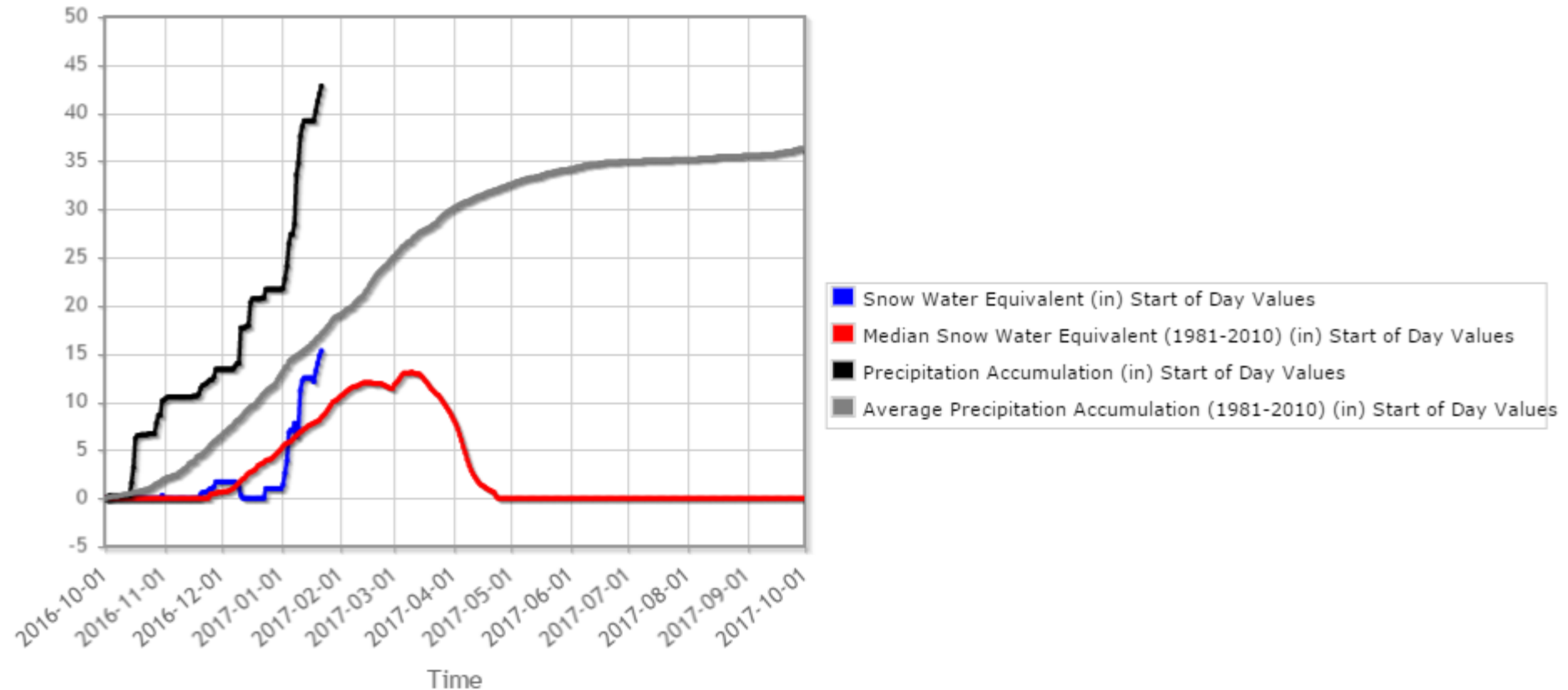
High Sierra	9-15+ feet
Tahoe Basin	2-5 feet (6-8 feet west shore)
Virginia Range	2+ feet
Hwy 395 - Bridgeport to Lee Vining	1-4 feet

**Massive
Snowpack
Increase!**

Photo:
Former NWS
Reno
employee

Snowpack

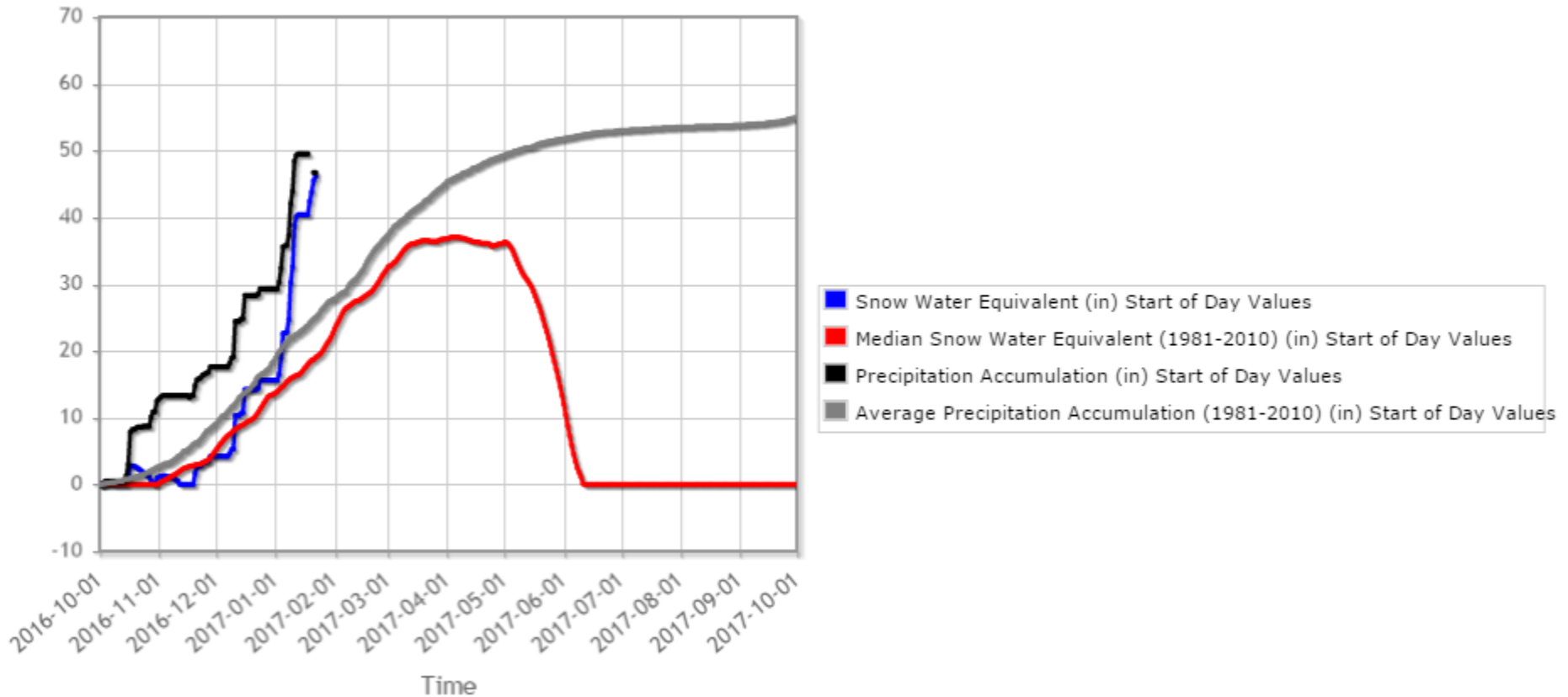
Tahoe City Cross (809) California SNOTEL Site - 6797 ft Reporting Frequency: Daily; Date Range: 2016-10-01 to 2017-09-01



- Low elevation (<7,000K): Loss of nearly all snowpack during December despite heavy precipitation
- Not to worry...then came January!
- SWE currently above April 1 average, and precipitation currently above water year total average

Snowpack

Mt Rose Ski Area (652) Nevada SNOTEL Site - 8801 ft Reporting Frequency: Daily; Date Range: 2016-10-01 to 2017-09-3



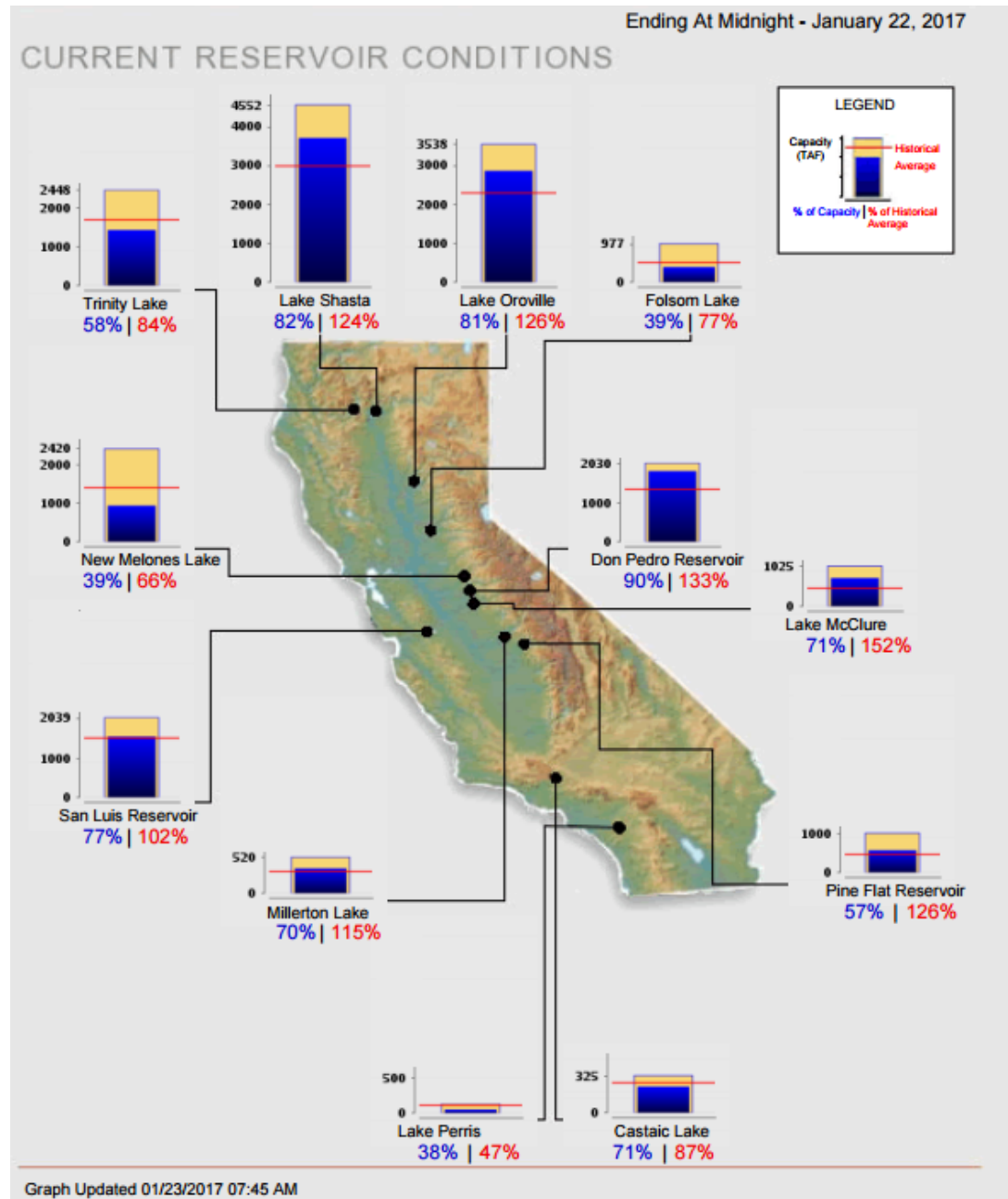
- Above 8,000K mostly snow has fallen
- December snowpack grew instead of shrank

Reservoirs

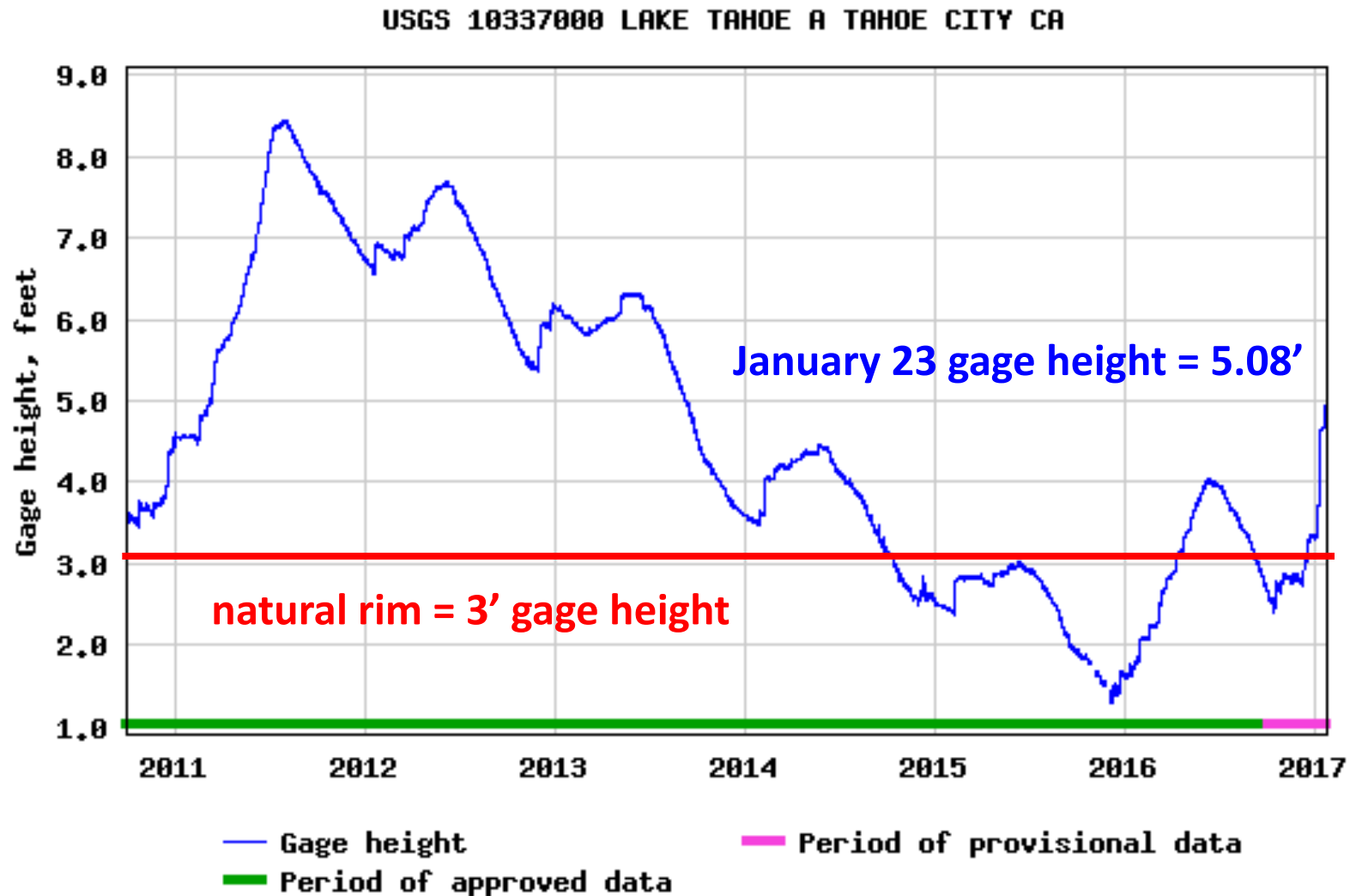
Santa Barbara County,
updated January 23:

Cachuma Reservoir at 11%
of capacity

Twitchell Reservoir at 4.8%
of capacity

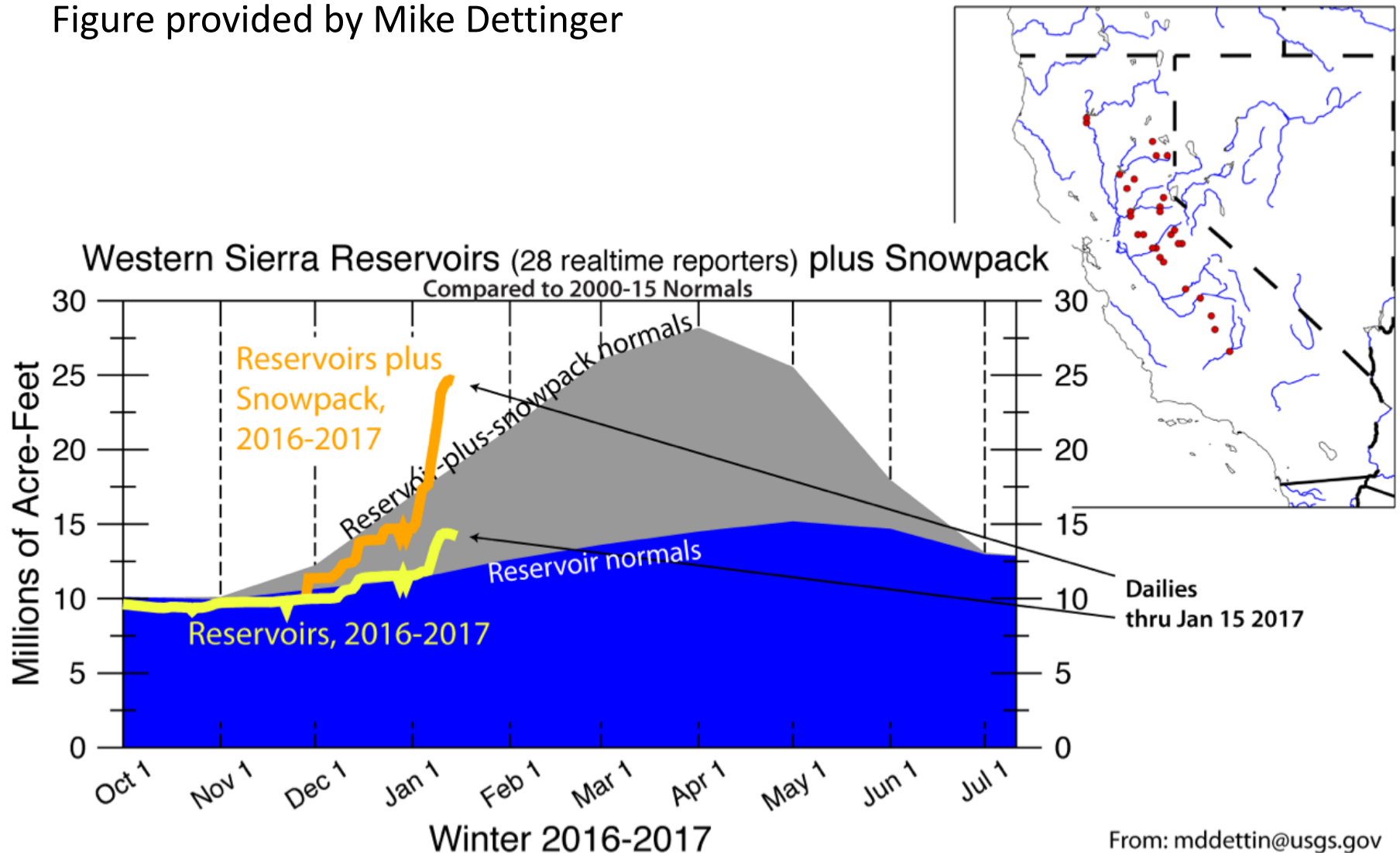


Reservoirs



Reservoirs + Snowpack

Figure provided by Mike Dettinger



Key Points

- Drought conditions have greatly improved at this point in the water year nearly universally across California and Nevada
- Southern California still digging out of severe drought, but conditions are improving
- Big unknowns:
 - How will the rest of the winter and spring play out?
 - Weather patterns and moisture can “turn off” just as quickly as they “turned on”.
 - How will this year impact groundwater storage and recharge?

Lake Tahoe as seen from
top of Incline Peak, NV.
February, 2014

Thank you!
Questions?
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